

Curriculum Vitae

Name: Nicaise
First name: Johannes
Sex: M
Place of birth: Leuven, Belgium
Nationality: Belgian
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Current positions: - Professor at Imperial College London, UK (50%)
- Professor (Hoogleraar) at KU Leuven, Belgium (50%)
- Chargé de Recherche première classe (CR1) of the Centre National de Recherche Scientifique (CNRS), France – on leave since 2009

Addresses: Imperial College London
Department of Mathematics
South Kensington Campus
London SW7 2AZ, UK

KU Leuven
Department of Mathematics
Celestijnenlaan 200B
3001 Heverlee, Belgium

Academic positions

10/2019 – today : Professor at KU Leuven (Belgium)
9/2018 – today : Professor at Imperial College London (UK)
9/2015 – 8/2018 : Reader at Imperial College London (UK)
10/2014 – 9/2019 : Associate Professor at KU Leuven (Belgium)
10/2009 – 09/2014 : Assistant Professor at KU Leuven
2/12/2008: Habilitation thesis *The trace formula and the analytic Milnor fiber*, Lille
03/2006 – today : Chargé de Recherche (CNRS) at Université Lille 1 (France). On leave since 10/2009
10/2005 – 02/2006 : Post-doctoral fellow of the Fund for Scientific Research – Flanders
8/12/2004: PhD thesis *Igusa zeta functions and motivic generating series*, Leuven
10/2001 - 09/2005 : PhD fellow of the Fund for Scientific Research – Flanders at KU Leuven and École Normale Supérieure de Paris (France)

Grants and awards:

- PhD and postdoctoral grant of FWO Flanders (see Curriculum)
- Marie Curie Fellowship for the Semester on K-theory and Non-Commutative Geometry, IHP, Paris, April - July 2004 (7 Keuro)
- FWO travel grant for a visit to the Université Bordeaux 1, January – May 2005 (10 Keuro)
- Founding member of the ANR projet jeunes chercheurs “Espaces de Berkovich” ANR-07-JCJC-0004 (2007-2011; 107 Keuro)
- EPSRC and LMS funding for the organization of the conference “Motivic Integration and its Interactions with Model Theory and Non-Archimedean Geometry” (ICMS, Edinburgh, May 2008; 18 500 GBP).
- Promoter of FWO grant G.0415.10 “Motivic integration and motivic Haar measure, zeta functions, and p-adic groups with the Howe - Moore property” (2010-2014; 305 Keuro; copromoter: R. Cluckers)
- Copromoter of OT grant 11/069 “Motivic zeta functions and Bernstein polynomials” (2011-2015; 325 Keuro; promoter: W. Veys)
- Copromoter of FWO grant G.0342.12 “Reestablishing smoothness for matrix manifold optimization via resolution of singularities” (2012-2016; 300 Keuro; promoter: R. Vandebril)
- Principal Investigator of ERC Starting Grant MOTZETA, “Motivic zeta functions and the monodromy conjecture” (2013-2018; 1 Meuro)
- Research member of MSRI, Berkeley (January - March 2014)
- Copromoter of KU Leuven Methusalem Grant (2015-2022; 2,8 Meuro; PI: S. Vaes)
- 2017 Prize of the Ferran Sunyer i Balaguer Foundation for the monograph “Motivic Integration” (15Keuro, joint with A. Chambert-Loir and J. Sebag)
- Member of the London Mathematical Society (2017 - today)
- Senior Marie Curie Fellow of the Freiburg Institute for Advanced Studies (2017-2018, for a total of 3 months)
- Copromoter of FWO grant “Igusa type zeta functions and the monodromy conjecture” (2018-2023; 290 Keuro; promoter: W. Veys)
- PI of EPSRC standard grant “Mirror symmetry, Berkovich spaces and the Minimal Model Programme” (2019-2023, £567K)
- John von Neumann Guest Professorship at TU Munich, autumn 2020

PhD students:

- Naud Potemans, 2018-2022 (co-advisor: W. Veys, Leuven)
- Corinne Bedussa, 2018-2022 (co-advisor: N. Budur, Leuven)
- Luigi Lunardon, 2016-2020
- Enrica Mazzon, 2015-2019
- Otto Overkamp, 2014-2018 (co-advisor: A. Skorobogatov, Imperial College)
- Annelies Jaspers, 2013-2017 (co-advisor: L. Halle, Copenhagen)
- Lore Kesteloot, 2012-2016 (co-advisor: O. Wittenberg, ENS Paris)
- Christophe Debry, 2012-2016 (co-advisor: L. Taelman, Amsterdam)
- Thomas Cauwbergs, 2011-2015 (co-advisor: W. Veys, Leuven)
- Emmanuel Bultot, 2011-2015
- Ben Jeuris, 2011-2015 (co-advisor: R. Vandebril, Leuven)
- Giovanni Rosso, 2010-2015 (co-advisor: J. Tilouine, Paris Nord)
- Lorenzo Fantini, 2010-2014
- Arne Smeets, 2010-2014 (co-advisor: J.-L. Colliot-Thélène, Paris Sud)

PhD thesis:

“Igusa zeta functions and motivic generating series”, Leuven, 8/12/2004

Advisors: - Prof. Dr. J. Denef (KU Leuven)
 - Prof. Dr. F. Loeser (ENS Paris).
 Jury: - Prof. Dr. E. Looijenga (Universiteit Utrecht)
 - Prof. Dr. W. Veys (KU Leuven)
 - Prof. Dr. J. Van Hamel (KU Leuven)
 - Prof. Dr. K. Dekimpe (Kulak)

Habilitation thesis:

“Formule des traces et fibre de Milnor analytique” (*The trace formula and the analytic Milnor fiber*), Lille, 2/12/2008

Jury: - Prof. Dr. A. Chambert-Loir (Université Rennes 1)
 - Prof. Dr. J. Denef (KU Leuven)
 - Prof. Dr. A. Ducros (Université de Nice; Referee)
 - Prof. Dr. H. Esnault (Universität Duisburg-Essen; Referee)
 - Prof. Dr. F. Loeser (ENS Paris)
 - Prof. Dr. M. Mustață (University of Michigan; Referee)
 - Prof. Dr. L. Ramero (Université Lille 1)

Organization of international conferences:

- GAeL 2005 – Géométrie Algébrique en Liberté (CIRM, Luminy, 21-25 March 2005), international school and conference organized by and for PhD students.
- “Motivic Integration and its Interactions with Model Theory and Non-Archimedean Geometry” (International Centre for Mathematical Sciences, Edinburgh, 12-17 May 2008), funded by EPSRC and LMS.
- “Motivic integration and complex singularities” (Lyon, 27-29 January 2010).
- International Summer School on Berkovich Spaces (Université Paris 6, 28 June – 9 July 2010) .
- “Toric geometry and applications” (Leuven, 6-10 June 2011)
- “Number theory, algebraic geometry and model theory” in honour of Jan Denef’s 60th birthday (CIRM, Luminy, 12 – 16 September 2011)
- “Trends in arithmetic geometry” (Lorentz Center, Leiden, 14-18 January 2013)
- Oberwolfach seminar “Motivic integration” (Oberwolfach, 13-19 October 2013)
- Summer school “Toric degenerations and mirror symmetry” (Sophus Lie Center, Nordfjordeid, 16-20 June 2014)
- Oberwolfach seminar “Berkovich Spaces and Degenerations of Calabi-Yau Varieties” (Oberwolfach, 16 - 22 October 2016)
- “Arc spaces and singularities” (Rennes, 21-25 November 2016)
- “P-adic differential equation” (CIRM, Luminy, 27-31 March 2017)
- "Conférence en l'honneur de F. Loeser" (Banyuls-sur-Mer, 28 May -1 June 2018)
- "Tropical Geometry and Moduli Spaces" (Rio de Janeiro, 13-17 August 2018) - Satellite Conference to the ICM 2018 in Rio de Janeiro

Editorial activities:

I am a member of the editorial boards of Algebraic Geometry, Manuscripta Mathematica, the Bulletin of the Belgian Mathematical Society and the North-Western European Journal of Mathematics.

Selected lectures (since 2015):

- Poles of maximal order of Igusa zeta functions – Simons Symposium on Tropical and Non-Archimedean Geometry, San Juan (Puerto Rico), 3 February 2015
- Refined curve counting and Hrushovski-Kazhdan motivic integration – AMS Summer Institute, Salt Lake City, 24 July 2015
- The essential skeleton of a degeneration of algebraic varieties – Collapsing Calabi-Yau manifolds, Simons Center, Stony Brook, 1 September 2015
- Geometric invariants of non-archimedean semi-algebraic sets – Non-Archimedean geometry and applications, Oberwolfach, 17 December 2015
- Refined tropical curve counting and motivic integration – Algebraic, Tropical, and Nonarchimedean Analytic Geometry of Moduli Spaces, CMO, Oaxaca, 5 May 2016
- A logarithmic interpretation of Edixhoven's jumps for Jacobians – Sino-French conference in algebraic and arithmetic geometry, Bordeaux, 25 May 2016
- From elementary number theory to string theory, and back again – Plenary talk at the joint meeting of the Mathematical Societies of Belgium, Luxembourg and Spain, Logrono, 7 June 2016
- Poles of maximal order of Igusa zeta functions – Algebraic Geometry: Satellite Conference of 7ECM, Hannover, 13 July 2016
- **Mini-course (4h):** The non-archimedean SYZ fibration and Igusa zeta functions – Berkovich spaces and degenerating Calabi-Yau varieties, Oberwolfach, 17-21 October 2016
- A tropical motivic Fubini theorem – Simons Symposium on Nonarchimedean and Tropical Geometry, Schloss Elmau, 19 May 2017
- A motivic Fubini theorem for the tropicalization map – Non-Archimedean geometry, motives and vanishing cycles, Mittag Leffler Institute, 27 June 2017
- The non-archimedean SYZ fibration – Annual Meeting of the Vietnamese Institute for Advanced Study in Mathematics, VIASM Hanoi, 19 August 2017
- **Mini-course (4,5h):** The non-archimedean SYZ fibration and Igusa zeta functions – Tianyuan Advanced Seminar on the Moduli Spaces in Algebraic Geometry, Shanghai Center for Mathematical Sciences, 2-7 April 2018
- The non-archimedean SYZ fibration – 30 years of Berkovich spaces, IHP, Paris, 11 July 2018
- Specialization of (stable) rationality in families with mild singularities – AGNES workshop, Brown University, Providence, 22 September 2018
- The non-archimedean SYZ fibration – Non-Archimedean Geometry and Applications, Oberwolfach, 26 February 2019
- Motivic volume and specialization of stable rationality – Rationality of algebraic varieties, Schiermonnikoog, 15 April 2019
- The non-archimedean SYZ fibration – New perspectives in Gromov-Witten theory, Paris, 7 June 2019
- The non-archimedean SYZ fibration – Geometry and arithmetic of algebraic varieties, Bonn, 13 June 2019
- Motivic specialization and rationality problems – Periods and Motives, Berlin, 9 July 2019
- Motivic specialization and rationality problems – Tropical methods in real algebraic geometry, Oaxaca, 10 September 2019